DETROIT DIESEL

SERIES 60® 2007 Service Information

NUMBER:07 60–4 **S.M. REF.:** Listed in Table 1 **ENGINE:** 60 **DATE:** July 2007

SUBJECT: SERVICE MANUAL REVISIONS

PUBLICATION: 6SE2007

EPA07

DETAILS AND REASON

The EPA07 Series 60 Service Manual has been revised. Procedures, torque specifications and maintenance intervals are revised and are available on Power Service Literature (PSL) or hard copy format.

Section	Change
English to Metric Conversion Table	Change table heading from Multiply Power to Multiply Pressure.
1.2.5 Installation of Cylinder Head	Step 9. Added torque turn to procedure. Tighten bolt 90° 1/4 of a turn.
1.3.3 Installation of Rocker Arm Assembly	Step 8. Change nut and bolt torque to 93-108 N·m (68-108 lb·ft).
Exceptions to Standard Fastener Torque Specifications Table	Change Refer to Section 1.21 to Refer to section 1.23 and torque change 103-113 N·m (76-83 lb·ft).
3.1 Overview of the Lubricating System	Corrected illustration of the Schematic Diagram of Current Lubrication System.
3.1 Overview of the Lubricating System	Deleted the following paragraph: On engines equipped with an air compressor, a flexible external oil line runs from a threaded hole at the top front corner of the left side of the cylinder block, which is tapped into the main oil gallery. The flexible line runs to a fitting at the air compressor assembly.
3.4.2 Removal and Cleaning of Oil Pressure Relief Valve	Changed: Step 1. Remove the two bolts and washers securing the relief valve outlet tube to the oil pump. Step 3. Tap outlet tube gently to remove outlet pipe. Step 4. Remove the oil pressure relief valve and gasket.
3.4.5 Assembly of Oil Pressure Relief Valve	Deleted; Location of Pressure Pin illustration.
3.7 Oil Cooler	Added sentence: There is a thermostat installed in the oil filter adapter assembly.
5.2.2 Oil Change Interval	Tables are now combined for the oil filter and oil change intervals and added kilometers.
5.3.8.2 Test Kit Procedures	Table Cooling System Cleaning Intervals; + NOAT Inhibitor has been removed.
8.1.2 Installation of the EGR Cooler	Step 8. Torque corrected to 12 N·m (106 in.·lbs).
11.1.2 Cleaning and Removal of Air Compressor	Step 6. Disconnect the lubricating oil supply line from the compressor. Has been deleted.
11.1.4 Pressure Relief Installation	Step 4. (No. 14 metric) changed to (No. 22 metric).
14.3 MAINTENANCE OF VEHICLE ENGINES	Maintenance intervals have been revised.

Table 1 Manual Revisions

English to Metric Conversion

Multiply Pressure	By	To get equivalent number of:
Inches of water (in. H_2O)	0.2491	Kilopascals (kPa)
Pounds/square in. ($lb/in.^2$)	6.895	Kilopascals (kPa)

1.2.5 Installation of Cylinder Head

9. Install the bolts and washers and torque bolts to 50 N·m (37 lb·ft) loosen the bolt 60° 1/6 of a turn or one bolt flat. Do not fully loosen the bolt, final torque the bolt to 35 N·m (26 lb·ft) + 90° 1/4 of a turn.

1.3.3 Installation of Rocker Arm Shaft Assembly

8. Torque the rocker shaft nuts and bolts to 93-108 N·m (68-108 lb·ft) using the sequence shown in Figure 1-53.

Exceptions to Standard Fastener Torque Specifications Table

Section	Fastener	Size	N·m	(lb·ft)
Refer to Section 1.23	Nut, Adjustable Idler Assy.	M12 X 1.75	103-113	76-83

3.1 OVERVIEW OF LUBRICATING SYSTEM

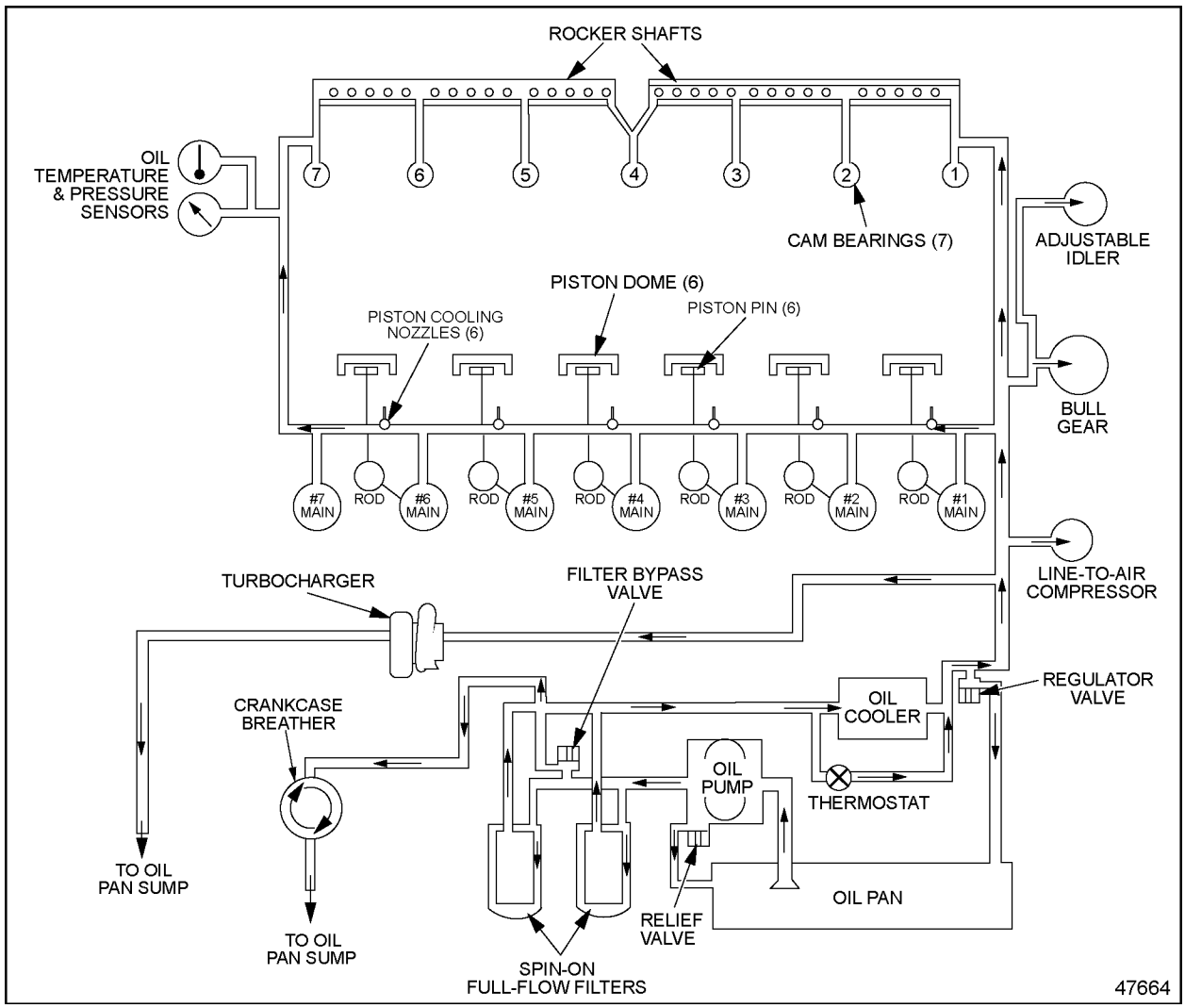

Figure 3 Schematic Diagram of Current Lubrication System

3.4.2 Removal and Cleaning of Oil Pressure Relief Valve

Remove the oil pressure relief valve as follows:

1. Remove the two bolts and washers securing the relief valve outlet tube to the oil pump.
2. Tap the oil pressure relief valve body lightly to loosen it from the gasket and cylinder block.
3. Tap outlet tube gently to remove outlet pipe.
4. Remove the oil pressure relief valve and gasket.

3.7 Oil Cooler

Two small seals are positioned in oil filter adaptor counterbores to seal the lubricating oil passages between the oil filter adaptor and the cooler core.

There is a thermostat installed in the oil filter adaptor assembly.

The oil cooler housing is attached to the oil filter adaptor. The flow of oil is from the oil pump, through a vertical passage in the cylinder block, through the full-flow oil filters and then through the oil cooler core and the cylinder block main oil galleries.

5.2.2 Oil Change Interval

Maintenance Item	Long Haul	Short Haul	Severe Duty
Operating Conditions			
Fuel Economy, mpg*	6.0 to 7.5	5.6 to 6.0	4.5 to 5.5
GVW, lbs	<80,000	70,000 – 80,000	>80,000
Idle Time, %*	0 to 25	25 to 35	>35
Load Factor %*	40 to 45	45 to 50	>55
Engine Oil and Filter Change†	30,000 miles (48,000 km)	20,000 miles (32,000 km)	15,000 miles (24,000 km)

*Based on mileage as recorded by the Common Powertrain Controller (CPC).†Using Detroit Diesel approved lube oil and oil analysis program. Refer to Oil Specification (PGOS) 93K218 approved oil.†Refer to publication “Lubricating Oil, Fuel, and Filters”, form 7SE270, available from authorized Detroit Diesel distributors.

Table 2 Maximum Oil Drain and Filter Change Intervals for Series 60 On-Highway Truck Applications using PGOS 93K218 Approved Oils with ULSD Fuel

5.3.8.2 Test Kit Procedures

Coolant	Interval - Whichever comes first	Action
Antifreeze/Water + SCA Inhibitor (DDC *Power Cool*)	32,000 km (20,000 miles) or 3 months	Test nitrite concentration with test strip. Add SCA or dilute coolant as needed.
	480,000 km (300,000 miles)	Drain and clean system. Replace with new coolant.
Ethylene Glycol Antifreeze/Water + SCA Inhibitor	32,000 km (20,000 miles) or 3 months	Test nitrite concentration with test strip. Add SCA or dilute coolant as needed.
	480,000 km (300,000 miles)	Drain and clean system. Replace with new coolant.
Propylene Glycol Antifreeze/Water + SCA Inhibitor	32,000 km (20,000 miles) or 3 months	Test nitrite concentration with test strip. Add SCA or dilute coolant as needed.
	480,000 km (300,000 miles)	Drain and clean system. Replace with new coolant.
Ethylene Glycol Antifreeze/Water	480,000 km (300,000 miles) or 2 years	Add *Power Cool* Plus Extender
	960,000 km (600,000 miles)	Drain and clean system. Replace with new coolant.
Propylene Glycol Antifreeze/Water	480,000 km (300,000 miles) or 2 years	Add *Power Cool* Plus Extender
	960,000 km (600,000 miles)	Drain and clean system. Replace with new coolant.
Water only+ SCA Inhibitor	32,000 km (20,000 miles) or 3 months	Test nitrite concentration with test strip. Add SCA or dilute coolant as needed.
	480,000 km (300,000 miles)	Drain and clean system. Replace with new coolant.
Water only	480,000 km (300,000 miles) or 2 years	Add *Power Cool* Plus Extender
	960,000 km (600,000 miles)	Drain and clean system. Replace with new coolant.

Table 3 Cooling System Cleaning Intervals

8.1.2 Installation of the EGR Cooler

8. Install two clamps onto EGR cooler outlet and oil cooler elbow inlet hose. Torque the clamp nut to 12 N·m (106 in.·lbs).

11.1.4 Pressure Relief Installation

4. Threads on the pressure relief valve are precoated with sealant; so no additional sealant is required. Install the valve into the compressor port and, using a 7/8 in. (No. 22 metric) deep socket, carefully torque the valve to 23-31 N·m (17-23 lb·ft).

14.3 MAINTENANCE OF VEHICLE ENGINES

Vehicle engine components must be maintained at various intervals.

14.3.1 12,000 km (7,500 Miles) Interval Maintenance

Every 12,000 km (7,500 miles), the following components must be inspected, serviced, corrected or replaced as necessary.

- □ Battery, refer to section 14.4.8
- □ Drive belts, refer to section 14.4.9
- □ Air compressor, refer to section 14.4.10

14.3.2 24,000 km (15,000 Miles) or 6 Month Interval Maintenance

Every 24,000 km (15,000 miles) or 6 months, the following components must be inspected, serviced, corrected or replaced as necessary.

- □ Air cleaner, refer to section 14.4.11

Likewise, the following components must be replaced every 24,000 km (15,000 miles) or 6 months.

- □ Lubricating oil, (Severe), refer to section 14.4.12
- □ Lubricating oil filter, (Severe) refer to section 14.4.12
- □ Fuel filter, refer to section 14.4.13.
- □ Coolant filter and inhibitor, refer to section 14.4.14

14.3.3 32,000 km (20,000 miles)

Every 32,000 km (20,000 miles) or 6 months, the following components must be inspected, serviced, corrected or replaced as necessary.

- □ Lubricating oil, (Short Haul) refer to section 14.4.1
- □ Lubricating oil filter, (Short Haul) refer to section 14.4.12

14.3.4 48,000 km (30,000 Miles) or 12 Month Interval Maintenance

Every 48,000 km (30,000 miles) or 12 months, the following components must be inspected, serviced, corrected or replaced as necessary.

- □ Fuel tank, refer to section 14.4.2
- □ Drive belts, refer to section 14.4.9
- □ Air compressor, refer to section 14.4.10
- □ Air system, refer to section 14.4.16
- □ Exhaust system, refer to section 14.4.17
- □ Engine (steam clean), refer to section 14.4.18
- □ Radiator and air-to-air charge cooler, refer to section 14.4.19
- □ Battery charging alternator, refer to section 14.4.21

Likewise, the following components must be replaced every 48,000 km (30,000 miles) or 12 months.

- □ Lubricating oil, (Long Haul) refer to section 14.4.1
- □ Lubricating oil filter, (Long Haul) refer to section 14.4.12
- □ Fuel filter, refer to section 14.4.13
- □ Coolant filter and inhibitor, refer to section 14.4.14

ADDITIONAL SERVICE INFORMATION

NOTE:
Additional service information is available in the Detroit Diesel *EPA07 Series 60 Service Manual,* 6SE2007. The next revision to this manual will be in July 2007.

DETROIT DIESEL
CORPORATION

13400 Outer Drive, West / Detroit, Michigan 48239-4001
Telephone: 313-592-5000
www.detroitdiesel.com

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